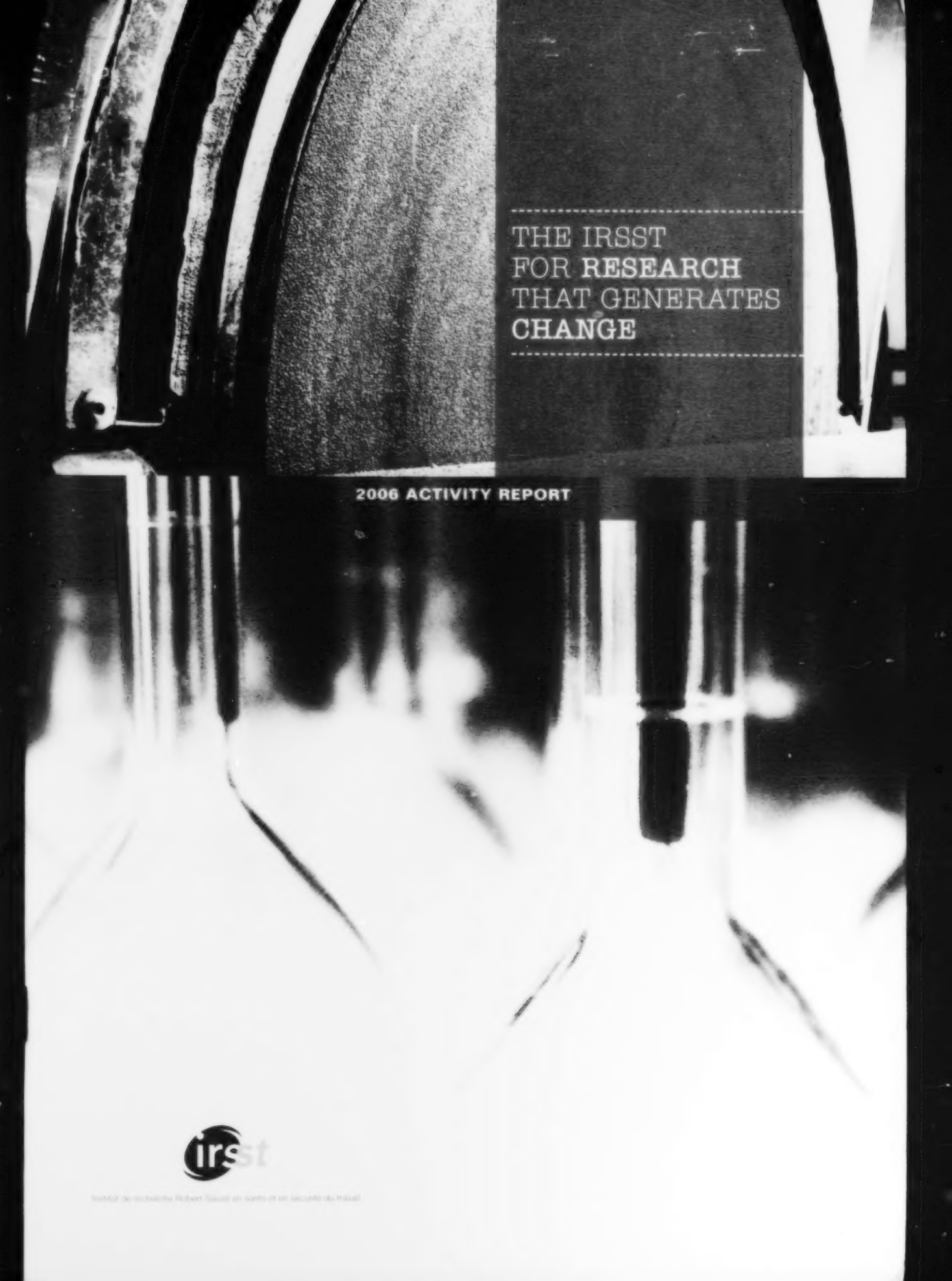


THE IRSST FOR RESEARCH THAT GENERATES CHANGE

2006 ACTIVITY REPORT

irsst

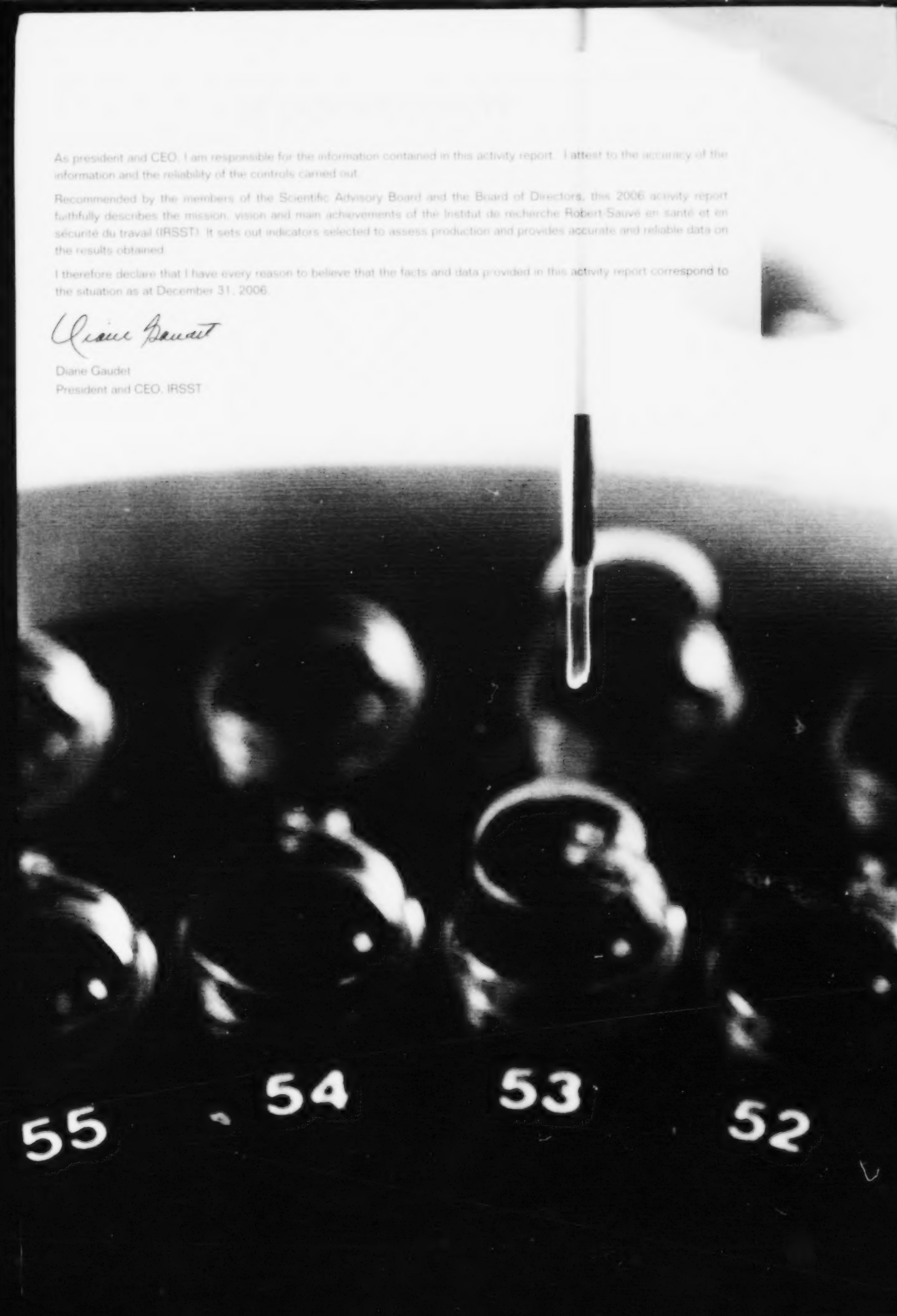
Institut de recherche Robert-Sauvé en santé et en sécurité du travail

As president and CEO, I am responsible for the information contained in this activity report. I attest to the accuracy of the information and the reliability of the controls carried out.

Recommended by the members of the Scientific Advisory Board and the Board of Directors, this 2006 activity report faithfully describes the mission, vision and main achievements of the Institut de recherche Robert-Sauvé en santé et en sécurité du travail (IRSST). It sets out indicators selected to assess production and provides accurate and reliable data on the results obtained.

I therefore declare that I have every reason to believe that the facts and data provided in this activity report correspond to the situation as at December 31, 2006.

Diane Gaudet
President and CEO, IRSST



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MESSAGE FROM THE PRESIDENT AND CEO

AT THE HEART: SCIENCE

While the goal of this strategic positioning has always been to increase the IRSST's research and expertise capacity, it must be said that we have put scientific research at the heart of our activities like never before. This is reflected mainly through the creation of a Scientific Division and through a more dynamic approach centred on research fields. By concentrating on the scientific activities within seven fields, by designating seasoned researchers to manage these fields, and by promoting interdisciplinary initiatives, we have put in place conditions favouring the development of research and innovation. The establishment of a structured strategic watch department is another way of equipping ourselves to meet the expectations of the CSST and our partners even more effectively.

AT THE CENTRE: RESEARCH

In addition to relying on a Scientific Division that ensures we are working on well-targeted priorities and solid scientific and ethical foundations in order to deliver quality results, we also wanted to confirm the place of research at the centre of our operations. Thus, by creating the Research and Expertise Division (REXD), the organization has armed itself with an important structure that monitors the smooth functioning of its scientific and technical activities, including Laboratory Services and Expertise. The REXD also provides support to both internal and external researchers, so that projects are carried out under the best possible conditions and results are delivered on schedule.

Furthermore, we are determined to ensure that the knowledge developed by our researchers is increasingly accessible and useful to our partners. The IRSST has always made the dissemination of knowledge a priority. We therefore wanted to promote this vital aspect of the research world by establishing a department dedicated to the transfer and brokering of knowledge. While overseeing partner relations, this team will monitor the systematic integration of the transfer and promotion of results to research and expertise activities. This emphasis on our transfer efforts should constitute major added value for our clients and partners.

EVALUATION

At the end of 2006, the IRSST's management received the report from the External Evaluation Committee that I had mandated to assess how well the organization was meeting the objectives of its mission regarding its research capacity and its efficiency. We took into account the comments made by the members of this committee in order to stimulate our scientific activities, including their observation regarding a larger budgetary allowance for our laboratories, a request approved by the Board of Directors, which I would like to thank on behalf of our personnel. The establishment of strategic orientations stemmed from the observations of the Evaluation Committee and those that we had made as part of our repositioning exercise. The initial results of these orientations are presented in this activity report, while others are still developing. The organization is thriving and, ultimately, the entire occupational health and safety (OHS) network will reap the benefits.

FUTURE

The External Evaluation Committee believes that the IRSST has "played an historic and crucial role in the construction of an OHS research community over the past 25 years." In this regard, I would like to pay tribute to all the scientists whose work has helped eliminate risks or prevent occupational injuries. I would also like to thank our governing bodies, with special mention to our Board of Directors for its unfailing support, and to our Scientific Advisory Board for its notable contribution. In addition, I would like to salute the IRSST's personnel, who, during this year of change, managed to adapt and produce, in an organization that was functioning with both new and old procedures. Concerned about the future, we have put everything in motion, to the best of our knowledge, to ensure that the implementation of this strategic plan will allow the IRSST to remain the Québec benchmark OHS research centre and a scientific and technical institution of international renown.

Diane Gaudet

Diane Gaudet

2006 IN NUMBERS

RESEARCH

187 projects were active in 2006*

51 projects were completed

41 projects were approved, broken down as follows:

- 17 joint
- 7 external
- 17 internal

84 other projects were being developed

92 partner organizations in the network were involved in active projects in 2006

28 committees of the CSST and its network, including regulatory committees, had at least one IRSST representative

14 national and international standardization committees invited the IRSST to serve on them in an expert capacity

40 scholarships were awarded, for a total of $434,600.*

* Summaries of all projects completed or funded by the IRSST, as well as the complete list of scholarship recipients, are available on the IRSST's Web site (www.irsst.qc.ca).

LABORATORY SERVICES AND EXPERTISE

75,535 environmental, toxicological and microbiological analyses were performed, 78% of which were for our partners in the prevention-inspection network, CSST, local health and social services network development agencies, and joint sector-based associations.

5,371 hours were devoted to the calibration, maintenance and repair of direct-reading and sampling instruments, 73% of which were for the prevention-inspection network.

In 2006, the IRSST's Management Committee met 19 times, while the expanded Management Committee held 9 work sessions, including one special meeting.

SCHOLARSHIPS

The IRSST's Graduate Studies Scholarship Program is another fine way in which the organization contributes to the development of future researchers. Setting themselves apart through the excellence of their university record, 40 students benefited from the IRSST's Graduate Studies Scholarship Program in 2006, sharing a total of $434,600. Twelve of them also succeeded in obtaining a scholarship from another organization, confirming the outstanding quality of their work. Of the 40 scholarships awarded, 7 went to master's students, 28 to doctoral students, and 5 to postdoctoral students.

DISSEMINATION

54 IRSST publications

- **52** research reports and guides published by the IRSST
- **2** synthesis reports published in collaboration with partners

183 scientific publications (reading committees) related to projects carried out or financed by the IRSST

- **71** periodical articles
- **92** articles published in conference proceedings
- **20** other publications, including book chapters, theses, etc.

94 presentations given by IRSST personnel or funded researchers at scientific conferences or events organized by partners.

21 popularized articles in *Prévention au travail*, the magazine published by the CSST and the IRSST, with a circulation of over **45,000**.

5,415 publications distributed in response to requests.

65,360 downloads of research reports from the IRSST's Web site.

495,335 visits to the IRSST's Web site, representing an average of **1,357** visitors per day.

6,118 subscribers periodically receive news related to laboratory activities, new research projects and the latest publications via the electronic newsletter *Info IRSST*, prepared by the Communications Division.

OPTIMIZING THE TRANSFER OF RESULTS

In addition to acquiring a communications policy and updating the IRSST's publishing policy, the Communications Division (CD) implemented a marketing plan aimed mainly at optimizing the dissemination of research results and expertise. By opting for an up-close communication strategy (direct contacts, relations with partners, information booth, etc.), and by combining the effect of the magazine *Prévention au travail*, the electronic newsletter *Info IRSST* and the Web site, the CD helped promote the IRSST's research results and reputation. These convergence efforts made it possible to enhance and diversify media coverage, increase the hits on the www.irsst.qc.ca site by 100,000, **495,335** this year, and, above all, multiply the number of document downloads, which went from 48,745 in 2005 to over **65,000** in 2006.

NEW ORGANIZATIONAL STRUCTURE

BY CARRYING OUT ITS RESEARCH AGENDA, DISSEMINATING THE RESULTS OF ITS RESEARCH, OFFERING THE SERVICES AND EXPERTISE OF ITS LABORATORIES AND [illegible] AS [illegible], THE IRSST IS [illegible] ITS MISSION. AND WE INTEND TO CONTINUE.

2003 WILL GO DOWN AS AN IMPORTANT YEAR IN THE CORPORATE ANNALS. EXCEPT FOR THE COMPLETION OF THE *THREE-YEAR SCIENTIFIC AND TECHNICAL PRODUCTION PLAN* – THE RESEARCH THAT GENERATES CHANGE AND THE APPLICATION OF THE STRATEGIC PLAN – DURING THE YEAR LED TO MANY ORGANIZATIONAL RESTRUCTURINGS. THESE SPIN-OFFS FROM THE THREE STRATEGIC POSITIONING INITIATIVE LAUNCHED IN THE FALL OF 2003, WILL HAVE A DECISIVE IMPACT ON THE IRSST'S FUTURE.

NEW ORGANIZATIONAL STRUCTURE

BY CARRYING OUT ITS RESEARCH AGENDA, DISSEMINATING THE RESULTS OF ITS FINDINGS, OFFERING THE SERVICES AND EXPERTISE OF ITS LABORATORIES, AND PLAYING ITS ROLE AS SCIENTIFIC AND TECHNICAL REFERENCE, THE IRSST IS BASICALLY FULFILLING ITS MISSION. AND 2006 WAS NO EXCEPTION.

2006 WILL GO DOWN AS AN HISTORIC YEAR IN THE CORPORATE ANNALS. SINCE THE ADOPTION OF THE *THREE-YEAR SCIENTIFIC AND TECHNICAL PRODUCTION PLAN – FOR RESEARCH THAT GENERATES CHANGE* AND THE APPLICATION OF THE *STRATEGIC PLAN – DARING TO CHANGE* LED TO VAST ORGANIZATIONAL RESTRUCTURING. THESE SPIN-OFFS FROM THE "OSER" STRATEGIC POSITIONING INITIATIVE, LAUNCHED IN THE FALL OF 2003, WILL HAVE A DECISIVE IMPACT ON THE IRSST'S FUTURE.

Characterized by the establishment of the Scientific Division (SD) and the Research and Expertise Division (REXD), the new structure is aimed mainly at implementing a more flexible organizational approach that gives researchers greater autonomy and puts science at the heart of the IRSST's activities.

SCIENCE

The Scientific Division defines the research orientations and programs, while monitoring the application of the scientific policy and compliance with ethical rules. It is accountable for research quality by ensuring primarily that research protocols and results are peer-reviewed. Concerned about maintaining the IRSST's leadership, it strives to enhance its innovation capacity, integrate strategic watch and statistical surveillance results, and promote scientific activity within the organization's seven research fields. The SD is also responsible for monitoring and updating the annual and three-year research plans.

OPERATIONS

In addition to enhancing its scientific component, the IRSST wanted to highlight the importance of operations, whether in terms of carrying out studies or promoting their results, through the creation of the Research and Expertise Division. The driving force of the organization, the REXD provides indispensable professional and technical support for internal activities, in addition to being the gateway for external research. While overseeing Laboratory Services and Expertise and ensuring that it contributes mainly to the development of knowledge, the REXD monitors the planning, execution and follow-up of research

and expertise activities. In order to maintain a link with the Strategic Plan, the REXD was also given responsibility for knowledge transfer, which remains a major issue for workplaces, as well as Partner Relations and the management of the Scholarship Program.

APPROACH BY RESEARCH FIELD

Created in April, the SD and the REXD carefully paved the way for the implementation of new procedures. Vigorous action was undertaken to enhance research and expertise activities. Of the methods retained, the approach by research field was favoured, leading to the dismantling of the research teams as they had been known. The accent is now on organization by research field and the use of interdisciplinarity and multidisciplinarity.

Research field leaders increased initiatives in order to promote this organizational model and create a scientific life brimming with research projects and activities. In addition to enhancing reflection on research orientations, the integration of scientists into the fields should encourage the development of knowledge and innovation.

breakthroughs in their respective fields. The IRSST wanted to transform these individual initiatives into a more structured exercise that would take place within better-defined mechanisms. Thus, the main steps for the establishment of a scientific watch department were presented and adopted by management in July 2006. As the main force behind the development of programs, this new department will also play an important role within research fields.

A strategic watch agent has been assigned to each field, and trained mainly to survey the existing networks, as well as to propose an information surveillance, collection, analysis and dissemination strategy. Among other things, the strategic watch is designed to anticipate emerging problems and effectively position the IRSST's research in relation to that which is under way or already completed elsewhere in the world.

STATISTICAL SURVEILLANCE

Closely tied to the Strategic Watch Department, the Statistical Research and Surveillance Group also took shape on the drawing board in the fall of 2006. The SD brought together a core of experts by repatriating into its

PAUL-ÉMILE BOILEAU

ALAIN DUGUE

Moreover, the addition of a strategic watch agent, who also acts as field coordinator, and a knowledge transfer advisor creates a new dynamic that will definitely have a significant effect. Already, the approach by research field has proven to be a powerful stimulant, creating a wave of scientific activities.

MONITORING SERVICE

Supplied with information by the Informathèque, their network of collaborators and their participation in conferences, the researchers have always done some strategic watch and surveillance in order to keep abreast of scientific developments and

ranks a team of scientists who, for the most part, were already involved in the production of OHS indicators differentiated according to certain socio-organizational characteristics. Now linked to the Scientific Division, this new group has the mandate to:

- explore current OHS statistical surveillance practices;
- identify statistical surveillance needs for the IRSST;
- locate sources of relevant Québec statistical data.

- structure statistical surveillance by research field
- build expertise and carry out research projects.

The synergetic effects of strategic watch and statistical surveillance will constitute an important added value, whose effects will be rapidly felt. Starting in 2007, the SD plans to establish statistical surveillance scenarios by research field and test them in certain niches. This team must work in close collaboration with the strategic watch agents. The combined results of the efforts of these two teams should stimulate research, contribute to research orientations, and enhance program quality, including that of each field.

SYSTEMATIC TRANSFER

The interface between the worlds of research and work, the Knowledge Transfer and Partner Relations Department (KTPRD) was created with the mandate of systematically integrating knowledge transfer into all of the IRSST's research and expertise activities. The establishment of this department reflects the IRSST's desire to make knowledge transfer a priority. Among the first actions taken by this new team since its creation in April 2006 was to ensure continuous interaction between the producers and users of knowledge. One of the favoured methods is to systematically involve the latter throughout the process of developing, producing and implementing research results.

Concurrently with its reflection process to acquire a practical framework, the KTPRD rapidly took action by introducing concrete projects. A knowledge transfer advisor was assigned to each field to accompany the researchers in order to ensure maximum results. In no time, the department had initiated, supported or encouraged no fewer than ten transfer activities, several of which have already been approved. Sometimes, the researchers themselves suggested courses of action, which dovetails perfectly into the participatory model this team wants to establish to promote the appropriation of results by the workplaces concerned.

The KTPRD is also striving to define the best strategies for knowledge brokering. Associated with the strategic watch agents, this team is responsible for developing methods for adapting the results of research conducted elsewhere, but that may meet needs expressed by Québec workplaces.

YVES BEAUDET

The activities launched in 2006 include:

- The prevention guide *Formaldehyde in the workplace*. Health effects, first aid, exposure measurement and control, and recommendations in relation to economic sectors are the subjects covered in this accessible, user-friendly guide. Indispensable for anyone who wants to know everything about the dangers associated with formaldehyde and about protection methods, it is accompanied by three fact sheets created specifically for the wood furniture manufacturing, wood panel manufacturing and embalming sectors. These documents are the result of the important research conducted by the team led by Nicole Goyer on the economic and health impacts of lowering the permissible exposure value for formaldehyde;

- The adaptation of a tool for evaluating restraining devices on transfer docks;

- Support for the development of a training course offered at the Association pour l'avancement des sciences et des techniques de la documentation (ASTED) in order to help managers of libraries and documentation centres integrate OHS concepts into their construction or reorganization projects;

- The development of a utility for calculating the corrected air temperature and the Wet Bulb Globe Temperature (WBGT) index;

- The production of fact sheets aimed at the prevention of occupational asthma among apprentices in various sectors or workplaces, etc.

In addition to ensuring knowledge transfer, the KTPRD must maintain ties and conduct follow-ups with the IRSST's main partners to ensure that research programming is well-adapted to their needs. This department also supports the scientific personnel in establishing partnerships or dealing with funding organizations.

PARTNERSHIPS

Concerned about enhancing its research capacity, extending its influence and multiplying the effects of each dollar invested, the IRSST acquired a partnership business plan in 2003. Every year, agreements are concluded to increase its research partnerships. Some of these agreements, whose value is difficult to measure, consist in pooling resources and combining expertise, while others provide for financial investments by each partner in a research project.

Between now and 2010, the agreements already signed total $18.4 million, $14 million of which comes from the partners. For each dollar invested by the IRSST, the partners will have contributed more than four dollars. For 2006 alone, partnerships accounted for $4,157,000, while the IRSST's share stood at $964,000.

GRADUAL TRANSITION

FISCAL 2006 WAS A YEAR OF TRANSITION FOR ALL EMPLOYEES, BUT THE EFFECTS OF THE RESTRUCTURING WERE PARTICULARLY SIGNIFICANT FOR THE SCIENTIFIC DIVISION (SD) AND THE RESEARCH AND EXPERTISE DIVISION (REXD). AT THE INSTITUTIONAL LEVEL, THE ESTABLISHMENT OF A WORKING MODEL RESULTED IN THE REVISION OF THE ROLES AND DUTIES OF THE PERSONNEL AND THE CREATION OF THE SCIENTIFIC DIVISION, WHILE THE REXD HAD TO ENSURE THE SMOOTH RUNNING OF DAY-TO-DAY OPERATIONS, WHILE RECONCILING NEW PROCEDURES WITH OLD ONES. AT THE SAME TIME, IT REVIEWED THE ENTIRE PROJECT ROUTING PROCESS. EVERY STEP IN PROJECT ANALYSIS, FROM THE RECEIPT OF THE LETTER OF INTENT TO THE AWARDING OF THE GRANT, INCLUDING THE EVALUATION OF THE PROJECT'S RELEVANCE AND PRIORITY, WAS EXAMINED AND QUESTIONED.

Taking into account the results of consultations with the personnel, the REXD implemented a new process, the main effects of which are to:

- achieve greater synergy with intermediaries;
- have better-targeted dissemination tools;
- better harmonize the follow-up of projects and activities.

FUNDED RESEARCH

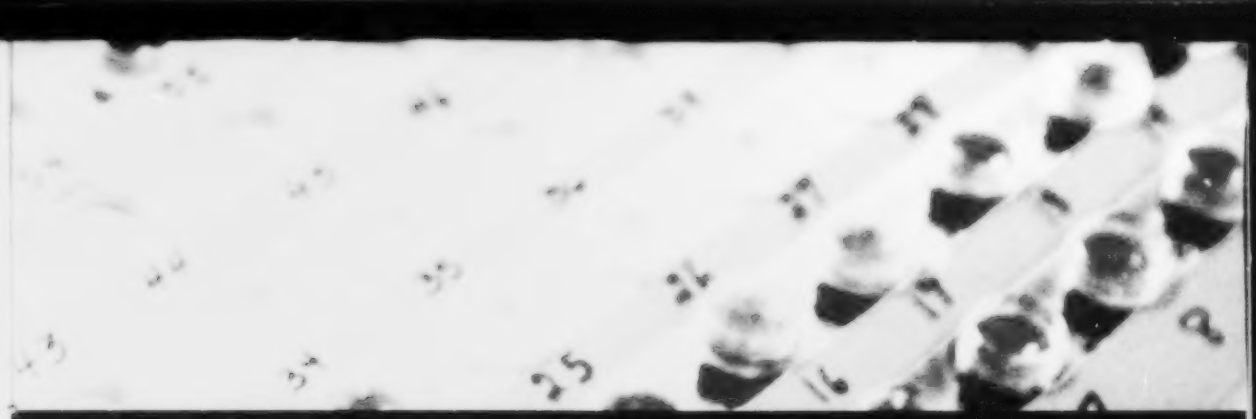
External research has always been an important aspect of the IRSST. Several members of its researchers' network therefore took part in the consultation held in the context of the strategic repositioning. Management carefully noted their comments and fulfilled most of their expectations. For grant applications, external researchers now have only one gateway. The IRSST has maintained three grant programs, but to prevent confusion, has renamed them as follows:

- Collaborative research grant program
- Collaborative activity grant program
- Competitive research grant program.

Moreover, in order to lighten the administrative burden, the guidelines for writing the progress report and final report have been relaxed and simplified.

SCHOLARSHIPS

To encourage future researchers interested in certain research fields, the REXD established the foundations for a double strategy. First of all, the IRSST decided to use its scholarship program to target the next generation of professionals in the fields of Safety of Industrial Tools, Machines and Processes, and Protective Equipment. The Board of Directors, on the recommendation of the Scientific Advisory Board, agreed that four scholarships would be awarded specifically to candidates whose study topic was related to the research orientations in these two fields. To better prepare future professionals, the IRSST also relies on an internship program. Thus in 2006, the REXD began surveying university bachelor of engineering internship programs. These efforts are already showing results.



THE IRSST AND ITS PERSONNEL
MONTH-BY-MONTH

01
January

The article "Contact Pressure Distribution at Hand-Handle Interface: Role of Hand Forces and Handle Size" published by the *International Journal of Industrial Ergonomics*, won the Liberty Mutual Best Paper Award. This text stems from the work of doctoral student Yasser Aldien, co-directed by Subhash Rakheja of Concordia University, and Paul-Émile Boileau, scientific director of the IRSST.

Donald C. Cole, senior analyst at the Institute for Work and Health in Toronto, gave a lecture entitled "Reflections on the Evaluation of Interventions for the Prevention of MSDs in Businesses" during his visit to the IRSST.

02
February

The IRSST's management met with the general managers of the joint sector-based associations to discuss the Strategic Plan and the Three-Year Research Plan.

Personnel involved in the MSD field attended the lecture "Characterizing the Intensity of Interventions for the Prevention of MSDs" by the Director of the Centre of Research Expertise for the Prevention of Musculoskeletal Disorders, Richard Wells, who is also associated with the Institute for Work and Health and a member of the Centre for Applied Health Research.

In relation to the CSST's Programme intégré d'intervention sur les risques biologiques (Integrated intervention program on biological risks), about twenty hygienists from the local health and social services network development agencies, Jacques Lavoie of the IRSST, and Dr. Denis Laliberté from the Québec Ministry of Environment, discussed the need to wear respiratory protection equipment and the usefulness of sampling for determining the quantity of bioaerosols to which workers in environment-related occupations are exposed.

The Minister of Labour, Laurent Lessard, made a special visit to the IRSST. He toured the technical shops and laboratories, and took a keen interest in the work being done there.

03
March

For the purpose of promoting OHS sciences and careers with young people, the IRSST teamed up with the Conseil des loisirs scientifiques de la région de Montréal and sponsored three science fairs, namely the regional finals in Montréal, the North Shore and the Montérégie. In this regard, chemist Simon Aubin hosted an IRSST information booth at the Forum provincial carrière en chimie, organized by students from Laval University.

A symposium organized by the research team of Steve Harvey from Bishop's University, and by the IRSST was part of an activity subsidized by the IRSST to analyze organizational intervention approaches and programs worldwide that have been designed to improve psychological health or reduce stress at work.

Chemist Marc Baril participated as a speaker at the "The GHS will soon replace the WHMIS. Will you be ready?" seminar organized by the Centre patronal de SST. Aimed at standardizing information on these substances, the Globally Harmonized System of Classification and Labelling of Chemicals (GHS) should come into force in Canada in 2008. This change is definitely a topic of concern, since Marc Baril gave this presentation ten times in 2006.

To better prevent problems related to microorganisms in the workplace, the IRSST offered a training course to technicians, hygienists and inspectors from the Montréal area. This course, given by microbiologist Geneviève Marchand, responded to a request by the Regional Council on Indoor Air Quality.

Researchers Élise Ledoux and Denys Denis participated in a meeting of young CNTU activists in Québec City. Discussions focused on the repercussions of job insecurity on occupational injuries, MSD prevention, the work environment and union life in OHS. Micheline Boucher, worker representative (CNTU) on the IRSST's Scientific Advisory Board, was part of the organizing committee for this gathering.

04

At the symposium organized by the National Occupational Research Agenda (NORA) in Washington, president and CEO Diane Gaudet gave a lecture entitled "Mission, vision, impact," while chemist Daniel Drolet gave a talk and presented a poster on the theme "Mixed exposures in the work environment – Web tool for their management."

Lecturer at the Université Joseph Fourier in Grenoble, researcher at the Centre de Recherche Innovation Socio-Technique et Organisation Industrielle, as well as member of the francophone group on MSDs, Sandrine Caroly was invited to give a lecture at the IRSST on the themes of long-term MSD prevention, and collective work organization.

05

About fifty machine safety and risk assessment specialists met in Montréal, at the invitation of the research leader of the Safety of Industrial Tools, Machines and Processes field, Joseph-Jean Paques, to participate in a scientific activity. The latter took the form of a special conference on the safety of industrial automated systems (SIAS).

The IRSST was invited to the International Conference on Occupational Risk Prevention, in Seville, where Diane Gaudet gave a talk entitled "Prevention policies in Canada – The IRSST'S approach."

During the AQHSST conference, the Antoine Aumont prize was awarded to Michel Gérin, chairman of the Department of Environmental and Occupational Health at the Université de Montréal. This IRSST collaborator has carried out some thirty research projects financed by the institute.

Advisor Laurent Gratton invited four IRRST graduate students and scholarship recipients to present their research work at a special session of the Comité d'exploitation des résultats de recherche (CERR). These participants were:

- Steve Dutil, 4th year doctoral student in microbiology at the Institut universitaire de cardiologie et de pneumologie of Université Laval and Laval Hospital.
- Maryann Joseph, 2nd year doctoral student in psychology at McGill University and affiliated with the Department of Thoracic Medicine of Sacré-Cœur Hospital.
- Houcine Ayari, 4th year doctoral student in mechanical engineering at the École de technologie supérieure.
- Sylvie Ouellet, 4th year doctoral student in biology at the Université du Québec à Montréal.

06

Two Canadians, including Paul-Émile Boileau from the IRSST, served on the Scientific Committee of the 1st American Conference on Human Vibration, organized in Virginia by the National Institute for Occupational Safety and Health (NIOSH).

The IRSST welcomed Thierry Loyau, from the Work Equipment Engineering Department of INRS-France. Mr. Loyau met with Hugues Nélisse from the Research Department, and Frank Sgard from the École nationale des travaux publics de l'État in France, currently on an internship at the IRSST. Both are working on the development of a support tool for the acoustical design of machine enclosures, with the collaboration of Mr. Loyau.

An IRSST chemist, Marc Baril, was chosen as Canadian representative on the U.S. Environmental Protection Agency's (EPA) National Committee on hazardous substances. This committee must establish new acute exposure guideline levels for chemical substances accidentally released into the air (NAC/AEGL).

Four Université de Sherbrooke doctoral students specializing in the prevention of occupational disabilities were honoured for the quality of their achievements. The jury, which included researcher Raymond Baril from the IRSST's Research Department, selected the presentation on the return to work by Eva Schonstein, Janne Skakon, Pascal Thibault and Jean-Baptiste Fassier. The IRSST's scientific director, Paul-Émile Boileau, awarded each of them the certificate of excellence issued by the IRSST.

Julien Pelletier, from the Agence Nationale pour l'Amélioration des Conditions de Travail in France, came to explore possibilities for collaboration with researchers Georges Toulouse and Iuliana Nastasia following the IRSST's publication of the report *Feasibility study for the integration of OHS and ergonomics into the PVA-Kaizen approach*.

07

On the initiative of the Groupe de recherche francophone sur les TMS, the IRSST was chosen as organizer and host of the 2e Congrès francophone sur les TMS, which will take place in Montréal on June 18 and 19, 2008. This event is aimed at bringing together French-speaking researchers and OHS practitioners to assess and establish perspectives for success in the prevention of these injuries and in the rehabilitation of victims.

09

The research leader of the Accidents field, Esther Cloutier, in collaboration with Élise Ledoux, created a research community on the theme of age and intergenerational relationships.

The American Society for Testing and Materials (ASTM) International solicited the support of chemist Pierre Larivière on the ASTM D22.04 Standardization Committee in the writing of an ICP-MS analytical method. Together with NIOSH, the Health and Safety Laboratory of the United Kingdom, and the U.S. Department of Energy, our laboratories collaborated on the development of this method, which will be used to simultaneously determine several metals collected on filter.

Two researchers from the National Research Council of Canada, Dr. Morad Atif and Hans Schleibinger, came to the IRSST to discuss their work. Both showed interest in the possibility of carrying out joint ventilation and microbiology projects with the IRSST, the Air Infiltration Ventilation Centre, and the Energy Conservation in Buildings and Community Systems organization.

As Chair of the Prevention Education and Training Committee of the International Social Security Association (ISSA), IRSST president and CEO, Diane Gaudet, gave the opening presentation at the 3rd International Seminar on Training in Occupational Health and Safety, in Berlin. IRSST researcher Élise Ledoux presented a profile of the research carried out in Canada on the transition of young people from school to the workplace, in addition to moderating a session on work integration.

SIMON AUBIN | MARC BARIL | RAYMOND BARIL | PAUL-ÉMILE BOILEAU | YVES CLOUTIER | DENISE CHICOINE | ESTHER CLOUTIER | GINETTE DENICOURT | DENYS DENIS | CHANTAL DION | DANIEL DROLET | NICOLE GOYER | LAURENT GRATTON | PIERRE LARIVIÈRE | JACQUES LAVOIE | ÉLISE LEDOUX | JACQUES LESAGE | GENEVIÈVE MARCHAND | IULIANA NASTASIA | HUGUES NÉLISSE | CLAUDE OSTIGUY | JOSEPH-JEAN PAQUES | SUZANNE PARADIS | MARIE ST-VINCENT | CHANTAL TELLIER | GEORGES TOULOUSE | GINETTE TRUCHON

10

October

The IRSST visited the trade show of the Ordre des conseillers en ressources humaines et en relations industrielles agréés du Québec (ORHRI), while Marjolaine Thibeault and Linda Savoie, from the Communications Division, hosted a booth at the exhibition. It was the first time the IRSST had participated in this event, which attracted over 1,000 people.

On the occasion of the Journées annuelles de santé publique (JASP), the director of the Strategic Watch and Quality Management Department, Jean-Claude Martin, helped organize a two-day symposium on the theme "Preventing occupational disability: a symposium to promote cooperative action."

The excellence award of *Travail et santé* magazine was given to Mathieu Fournier for his article entitled "Validation of a global sampling and analysis method for evaluating workplace exposure to amines." This IRSST scholarship recipient worked under the supervision of Claude Ostiguy and Jacques Lesage from the IRSST, and Huu Van Tra from UQAM.

The Industrial Accident Prevention Association and the IRSST signed a new cooperative agreement aimed at "supporting and strengthening new or current initiatives to provide workplaces with better-adapted products, services, training and research results."

The president of Biophage Pharma, Dr. Rosemonde Mandeville, presented a blood test for certain metals to members of the Chemical Substances and Biological Agents field.

The IRSST signed a new collaborative agreement with the Institut national de recherche et de sécurité (INRS-France) aimed at optimizing a tool for selecting solvent-resistant protective gloves. This partnership is intended to provide occupational health and safety practitioners with a glove selection tool and guide.

11

November

For the first time, chemist Chantal Dion participated in a meeting, in Paris, of a task force from the Agence française de sécurité sanitaire de l'environnement et du travail (Afsset), which was looking for specialists to conduct a scientific study on short asbestos fibres, namely those less than five microns in length.

The IRSST was invited to participate in a think tank on bioaerosols organized by INRS-France in order to establish its five-year strategic plan. Geneviève Marchand represented the IRSST at the Emerging Needs in Aerosol Research for Occupational Hygiene symposium, in Nancy.

Invited to cap the IRSST's 25th anniversary, 115 IRSST scientists, university researchers and CSST partners gathered together to discuss the future of OHS research. On this occasion, the international coordinator of NIOSH, Marilyn A. Fingerhut, the scientific director of INRS-France, Jean-Claude André, and Camille Limoges gave a lecture. At this event, INRS-France presented the IRSST with the prevention medal to underline its contribution to knowledge development. President and CEO Diane Gaudet accepted the medal on behalf of the entire staff.

The director of the IRSST's Research and Expertise Division, Alain Lajoie, became vice-president of the Association québécoise pour l'hygiène, la santé et la sécurité du travail (AQHSST).

Scientists from the Accident field and other researchers addressed the issue of age, intergenerational relationships and OHS with Annie Jolivet, economist from the Centre d'étude pour l'emploi in Paris. Ms. Jolivet is examining the consequences of an aging workforce on OHS, as well as the different ways in which this is being managed in SMEs and large businesses.

The IRSST saluted André Bazergui, the 2006 winner of the Carrière institutionnelle award, given by the Association de la recherche industrielle du Québec (ADRIQ). The business, technology and scientific research communities paid him tribute at the Prix Innovation gala by presenting him with this honorary distinction sponsored by the IRSST.

December

The IRSST and the Association of Canadian Ergonomists (ACE) teamed up to offer a training course on handling to ergonomists and OHS professionals. This activity was developed by two specialists, including ergonomics researcher Denys Denis.

The IRSST and Concordia University's Concave Research Centre announced that they will be hosting the 4th International Conference on Whole Body Vibration Injuries, to be held in Montréal from June 2 to 4, 2009.

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LABORATORIES IN TUNE WITH CLIENTS

In 2006, the analytical production of laboratory services and expertise increased by 4% over the previous year, once again reaching an unprecedented level. Due mainly to greater demand from private clientele, this increase is a good indicator of the interest in the expertise of the IRSST's laboratories and the quality of their work.

Moreover, a survey conducted in 2006 on client satisfaction indicated that the competence of the personnel and the quality of its work were recognized and appreciated. In this survey, clients also stated a desire to obtain even more rapid responses to their analysis requests. The laboratories feel that they will be able to meet this need, since it was expressed just as the Occupational Health Information System (SISAT) was being introduced. This system led Laboratory Services and Expertise to significantly modify its management of requests for environmental, toxicological and microbiological analyses. Among other things, it allowed for the exchange of analysis requests and analysis reports electronically, thereby substantially reducing the response time. To date, three regions in Québec are using the SISAT system, which will be implemented by the Institut national de santé publique du Québec (INSPQ) in all other regions in May 2007.

MICROBIOLOGY

In November, nearly 100 people, members of the Association des microbiologistes du Québec and other participants interested in the contribution of microbiology to OHS, gathered at the IRSST to take stock of current knowledge in this field. Organized by Geneviève Marchand and Yves Cloutier, this meeting involved eight presentations on the detection of agents related to bioterrorism, the control of microbial contamination in industrial fluids, evaluations of microbial risks and risk in clinical laboratories, infectious diseases, respiratory protection, the detection of pathogenic bacteria, and the physical and operational requirements of a confinement level.

Furthermore, for clients with needs in microbiology, the laboratories came up with a new form that is easier to fill out and better adapted to the services and expectations of this clientele. This form was accompanied by a training course, offered to hygienists in the Montréal region, on analyses that can be carried out according to the type of sampling.

METHODS AND CERTIFICATIONS

In 2006, the laboratories developed and implemented new analytical methods. Offered in 2007, these methods will make it possible to analyze solvents, nitrosamines, chromates and metals by ICP-MS.

Laboratory Services and Expertise also had their accreditation certificate in industrial hygiene (IHLAP) and microbiology (EMLAP) renewed by the American Industrial Hygiene Association (AIHA).

The National Research Council of Canada also renewed the IRSST's accreditation as a calibration laboratory, certified by CLAS.

ANALYSIS OF COMPRESSED AIR

A prototype of a portable breathable compressed air analysis and sampling system was developed by Innovation Maritime, with the collaboration of the IRSST's laboratories, in order to provide clients with modern, efficient equipment. As soon as the field tests are completed, this device will be included in the tool box in the equipment database offered by Laboratory Services and Expertise.

YUVIN CHINNIAH

RESEARCH: 2006 HIGHLIGHTS

In this year of strategic changes, scientific and technical personnel were able to negotiate the shift while ensuring production and making their expertise available to the partners in the public prevention network.

No fewer than 183 projects were active and 43 new files were approved. The projects carried out allowed known problems to be corrected, emerging issues to be identified and, in some cases, needs to be anticipated.

1. Work on nanotechnologies in 2006 generated interest that continues to grow. The publication and translation into English of two literature reviews, *Health Effects of Nanoparticles* and *Nanoparticles: Actual Knowledge about Occupational Health and Safety Risks and Prevention Measures*, written by chemist Claude Ostiguy, caused a chain reaction... First of all, the IRSST, CSST and Nano-Québec joined forces in order to provide Québec with a guide of good practices for the safe handling of nanoparticles, in both the university and industrial contexts. In terms of standardization, the IRSST will also play a role, since it now serves on the ISO TC229 Technical Committee on nanotechnologies. In addition, the IRSST's scientific director, Paul-Émile Boileau, is the co-chair of Work Group 3, which focuses mainly on OHS issues. For their part, the research leader of the Chemical Substances and Biological Agents field, Ginette Truchon, and her colleague Yves Cloutier, established a nanotoxicology research community in order to better understand the health and safety aspects of nanoparticles.

   This mobilization also helped establish a research network on the ethical, economic, legal, social and environmental aspects of nanotechnologies. Called NE3LS, this network comprises the three research funds of Québec (FQRNT, FQRSC, FRSQ), Nano-Québec and the IRSST. The momentum continues, since the IRSST has already begun updating literature reviews on the health risks of nanomaterials and the means of preventing them.

2. The publication of the guide *Le travail à tâches variées : une démarche d'analyse ergonomique pour la prévention des TMS* (Work Involving Varied Tasks – An Ergonomic Process for MSD Prevention) caused quite a stir in 2006. Denise Chicoine, Chantal Tellier and Marie St-Vincent wanted to tackle the complex problem of analyzing work involving varied tasks, which, like short-cycle repetitive tasks, can cause MSDs. Presenting an approach and tools for ergonomic analysis, this guide is intended for ergonomists, professionals and decision-makers who want to get involved in this type of intervention. It definitely meets a need, since it has been one of the most downloaded publications from the IRSST's Web site since its release.

RESEARCH: 2006 HIGHLIGHTS

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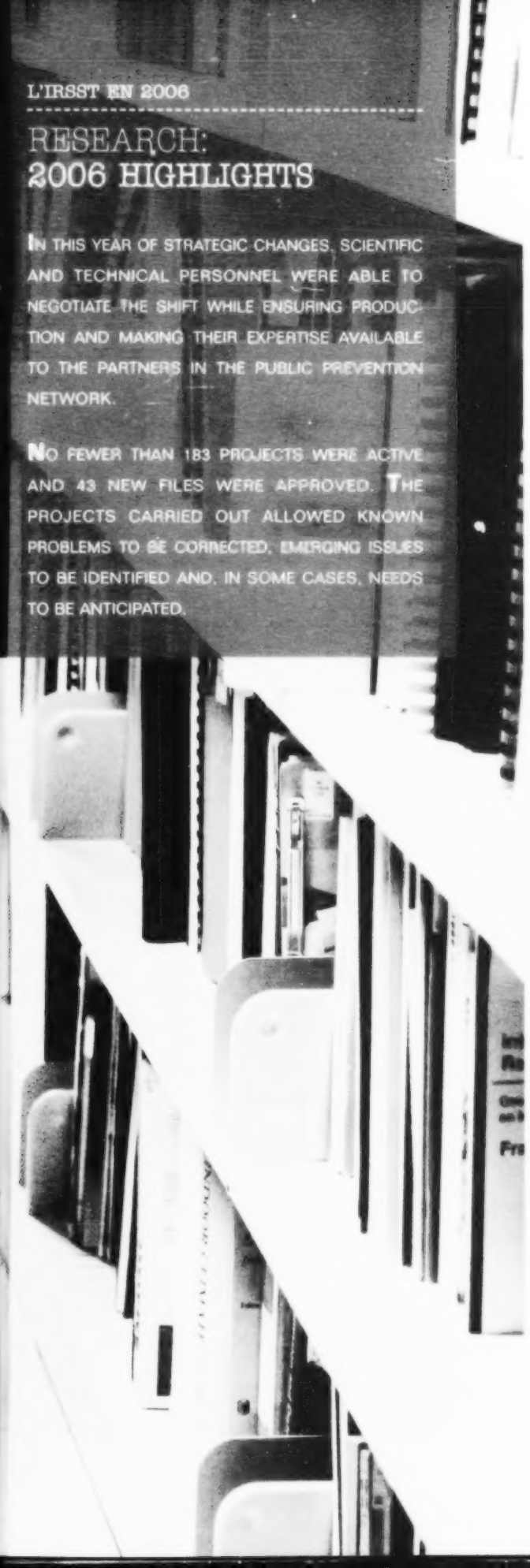

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3. A timely issue and growing phenomenon that affects executives and employees alike, occupational psychological health (OPH) has definitely become a major emerging issue in organizations. In order to ensure the development of knowledge and better pave the way for OPH research, an action plan was produced and approved in 2006. Basically, the IRSST will support projects that are designed to:

   a. Prevent physical and psychological violence in the workplace;

   b. Promote individual and organizational management of work-related stress;

   c. Evaluate employee assistance programs and other prevention measures;

   d. Prepare for a return to work following an occupational injury.

   Projects involving high-risk job categories such as nurses, emergency services personnel, specialized educators, teachers, road transport operators, cashiers, and administrative staff in the financial and public administration sectors are more likely to be selected.

   Several occupational psychological health projects were already under way in 2006.

4. In keeping with its mandate, which consists mainly in implementing a strategy for the development of research on young workers, Opération JeuneSST forged ahead by presenting three new projects and by publishing a research report and perspective on the OHS of this population. These projects are as follows:

   a. Novel approach for making young workers aware of their working, employment and OHS conditions;

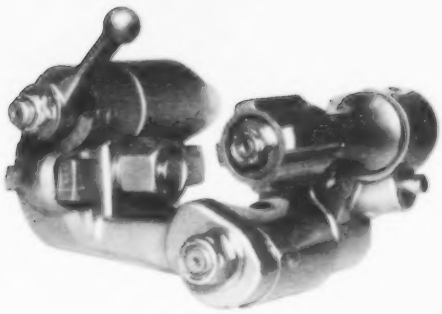
   b. Studying and working in the regions at 18 years of age: What OHS risks? An exploratory study;

   c. Exploratory study of job paths related to the appearance of initial injuries in young people 16 to 24 years of age.

   The work of this team, headed by Élise Ledoux, dovetails perfectly into one of the intervention orientations of the CSST's strategic plan, which is to actively promote the acquisition of a prevention culture by young people.

5. The results of a study highlighting the importance of work organization as a means of protecting homecare personnel were presented to about twenty consultants from the Ministry of Health and Social Services. The coordinator of this project, Esther Cloutier, explained that four case studies, in as many CLSCs, helped generate an organizational model promoting the safety of homecare personnel. After conducting this study, the IRSST documented the working and OHS conditions of nurses working in private agencies.

6. Handling, ventilation and emergency call centres triggered the creation of three new thematic programs. Of our 35 thematic programs, 32 were active and resulted in the completion of at least 1 project. As expected, half (49%) of the research projects in 2006 were integrated into these programs. This practice constitutes a concrete way of consolidating fields and promoting the achievement of tangible results for occupational health and safety practitioners.



ANTI-VIBRATION HANDLE

7. Financed by the IRSST and carried out by the Groupe d'acoustique de l'Université de Sherbrooke (GAUS) and the Canada Centre for Mineral and Energy Technology (CANMET), design work on an anti-vibration handle for jack-leg drills led to the marketing of the product. The Parts HeadQuarters Inc. company marketed this handle, which reduces the transmission of vibration to the hands and body of workers using these tools.

MARIE-CLAUDE BARRETTE

In 2006, the IRSST welcomed 17 new employees into its ranks.

In keeping with its strategic positioning, the IRSST opened its doors to an unprecedented number of graduate and post-graduate students, interns, researchers and professors. In 2006, 34 students, interns or collaborators came on board, focusing mainly on research and laboratory work. The IRSST plans to continue this hiring policy, which promotes networking and the exchange of knowledge, while generating interest in OHS research.

In addition, under the coordination of laboratory technician Suzanne Paradis, the IRSST participated in three projects: Opération Relève TechnoScience, aimed at promoting science careers and preventing school dropouts; Classes Affaires, involving career exploration training sessions, and the reception of college students. These initiatives helped raise the OHS awareness of some one hundred young people, either through visits to our laboratories or via school presentations by IRSST personnel.

- Geneviève Marchand successfully defended her doctoral thesis *"Détection moléculaire d'Aspergillus versicolor et comparaison avec les methodes d'analyses de l'air basées sur les cultures et les comptes de conidies."* (Molecular detection of Aspergillus versicolor and comparison to air analysis methods based on conidial cultures and counts).

- Ginette Denicourt, from the Strategic Watch and Quality Management Department, obtained her doctorate in the Clinical Sciences program at the Université de Sherbrooke, after defending a thesis on the impact of disciplinary culture on the evaluation of the ethical risks of research.

HEALTH AND SAFETY OF PERSONNEL

OHS is not just a research subject; it is also a value that the IRSST wants to integrate into its daily activities. To this end, every year, the Health and Safety Committee (HSC) develops a prevention, training and information plan. In order to ensure that employees know the proper steps to follow, the HSC systematically revises the policies and procedures. As a result, eight procedures were updated during the year.

The HSC completed the implementation of a respiratory protection program in order to ensure that all workers exposed to certain contaminants are effectively protected. This program is reviewed annually in order to integrate the necessary corrections. Consequently, workers receive yearly training on the fit and use of respiratory protection equipment.

In November, five employees took a course on first aid in the workplace to develop and update their knowledge.

In 2006, 13 reports were entered in the accident, incident and first aid register, three of which were the subject of an investigation. Once again, in 2006, since the IRSST'S record was better than that of businesses operating in the same sector of activity, its CSST assessment rate was 4.3% lower than the unit rate.

CLASS OF 1981

They were there –virtually– when the IRSST opened its doors... and they are still there. Management underlined the 25 years of service of 16 pioneering employees. They are Guylaine Beauchamp, Lise Brière, Diane Cormier, Raynald Gauthier, Denis Giguère, Nicole Goyer, Louise Lafontaine, Alain Lajoie, Ghislaine Lamarche, Gilles Paradis, Suzanne Paradis, Thierry Petitjean-Roget, Brigitte Roberge, Jacques Roy, Henry Scory and Sylvie Tremblay. To mark the lasting nature of their contribution, the president and CEO, Diane Gaudet, presented them with an original Inuit sculpture.

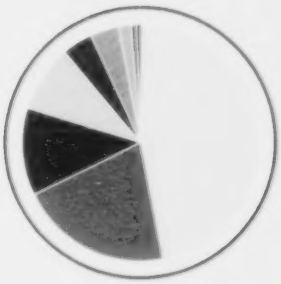
FINANCING

REVENUES $21,406,457

CSST	83.02 %
LABORATORY SERVICES	11.95 %
EXTERNAL CONTRACTS	2.37 %
SPECIAL PROJECTS	1.55 %
BERYLLIUM	0.41 %
OTHER	0.70 %

EXPENSES $20,891,825

INTERNAL RESEARCH	47.11 %
EXTERNAL RESEARCH	20.83 %
LABORATORY SERVICES	11.89 %
FINANCE AND ADMINISTRATION	9.12 %
COMMUNICATIONS	4.37 %
MANAGEMENT	3.71 %
EXTERNAL CONTRACTS	1.72 %
SPECIAL PROJECTS	0.83 %
BERYLLIUM PROJECTS	0.42 %



As at December 31, 2006

BOARD OF DIRECTORS AND SCIENTIFIC ADVISORY BOARD

The **Board of Directors** determines IRSST's orientation, development framework and funding.

In 2006, the IRSST's Board of Directors met seven times.

CHAIR

Réal Bisson, Interim

WORKER REPRESENTATIVES

Michel Arsenault
Andrée Bouchard
Pierre Dupuis
Claude Faucher
Jean Lavallée
Henri Massé
Roger Valois

EMPLOYER REPRESENTATIVES

François Cliche
Céline Dugré-Charron
Richard Fahey
Franco Fava
Yves Gilbert
Michel Kelly-Gagnon
François-E. Pelletier

OBSERVER

Daniel Charbonneau

IRSST MANAGEMENT

Diane Gaudet

The **Scientific Advisory Board** advises the president and chief executive officer. Its mandate is to assess the relevance, importance and scientific quality of internal and external research orientations, projects and programs.

In 2006, the members of the IRSST's Scientific Advisory Board met nine times (seven regular meetings and two special meetings).

CHAIR

Diane Gaudet

EMPLOYER REPRESENTATIVES

Robert Borduas
Richard Lapointe
Roger M. Laporte
Alain Neveu

WORKER REPRESENTATIVES

Micheline Boucher
Jean Dussault
Daniel Flynn
Robert Guimond

MEMBERS OF THE SCIENTIFIC AND TECHNICAL COMMUNITIES

Jean-Marc Brodeur
Christine Colin
Mireille Mathieu
Yves Rousseau
Charles Terreault
André Van Neste

OBSERVERS

Guylaine Rioux
Alain Lajoie

During the year, the chair of the IRSST's Board of Directors, Gérard Bibeau, relinquished his duties to take on the position of secretary general of the government and clerk of the Conseil exécutif. The interim position was given to Réal Bisson. The Conseil des ministres also appointed Céline Dugré-Charron, as well as Michel Kelly-Gagnon, Richard Fahey and Yves Gilbert as employer representatives. They replace Gilles Taillon, Gaston Lafleur, Sylvain Lebel and Jean-Paul Robin. At the same time, the government renewed the mandate of all the other employer and worker members of the Board of Directors.

On the Scientific Advisory Board, the mandates of the following members were renewed: Mireille Mathieu and Christine Colin, as well as Robert Guimond, Robert Borduas, Richard Lapointe, Yves Rousseau and Alain Neveu.

On behalf of the personnel, the IRSST's president and CEO, Diane Gaudet, would like to sincerely thank the outgoing members and offer her full cooperation to the newcomers.

ESTABLISHED IN QUÉBEC SINCE 1980, THE INSTITUT DE RECHERCHE ROBERT-SAUVÉ EN SANTÉ ET EN SÉCURITÉ DU TRAVAIL (IRSST) IS A SCIENTIFIC RESEARCH ORGANIZATION KNOWN FOR THE QUALITY OF ITS WORK AND THE EXPERTISE OF ITS PERSONNEL. THE IRSST'S BOARD OF DIRECTORS IS MADE UP OF AN EQUAL NUMBER OF EMPLOYER AND WORKER REPRESENTATIVES.

MISSION

To contribute, through research, to the prevention of industrial accidents and occupational diseases as well as to the rehabilitation of affected workers;

To offer the scientific services and expertise necessary for the enhancement of the parties' occupational health and safety prevention expertise;

To disseminate knowledge and to act as a reference, benchmark and expert.

VISION

Through its leadership in occupational health and safety research, the IRSST intends to:

- become a reference centre that is vital for the operations and strategies of the CSST and its network;
- be used by its social partners in a context of labour-management collaboration;
- be recognized nationally and internationally;
- have a firmly established network of collaborators in research and development.

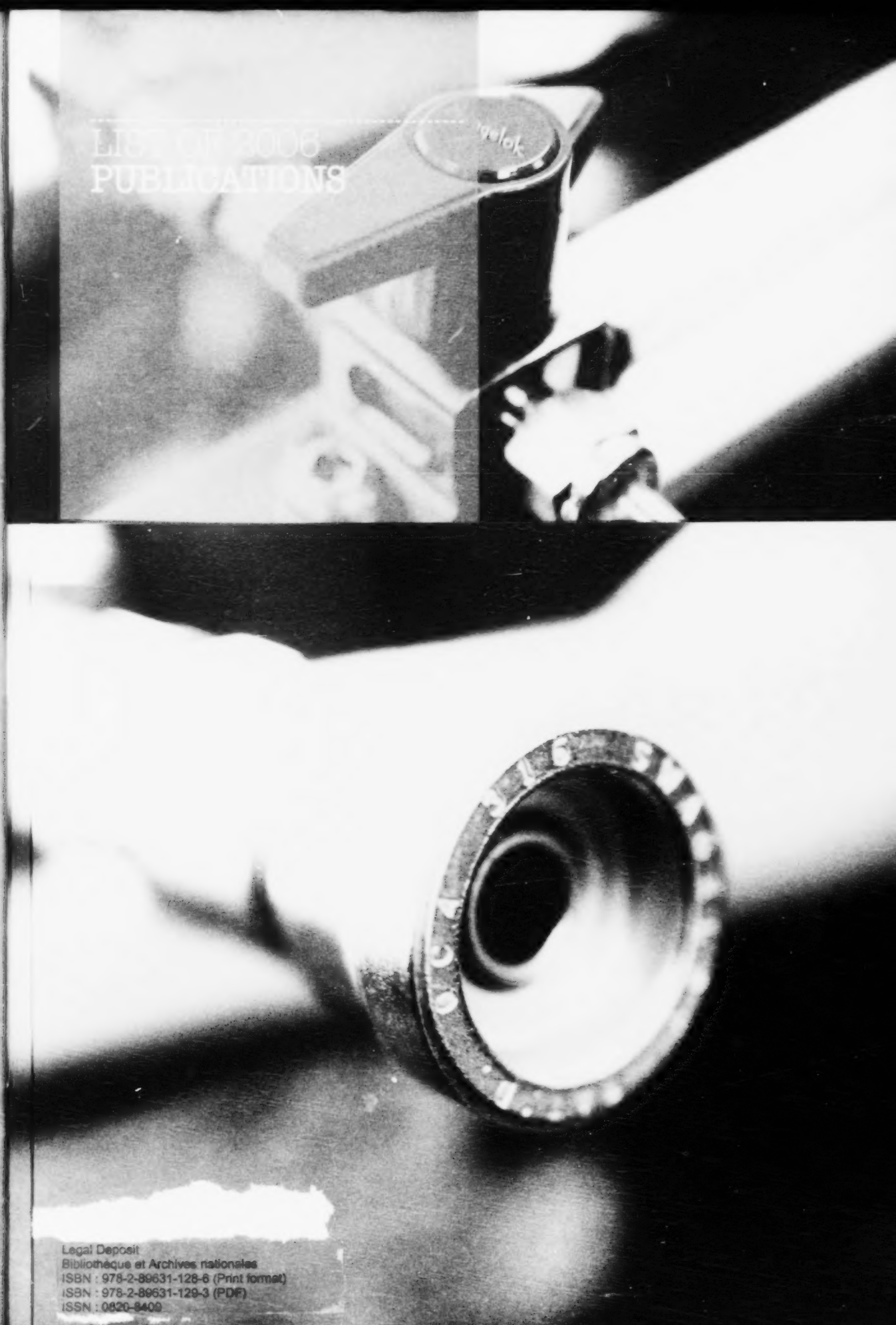
WWW.IRSST.QC.CA

TO KNOW THE LATEST ABOUT OUR RESEARCH

TO DOWNLOAD OUR RESEARCH REPORTS FREE OF CHARGE

TO FIND OUT ABOUT OUR GRANT AND SCHOLARSHIP PROGRAMS

LIST OF 2006 PUBLICATIONS



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